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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re the Application of
Thieret et al.
Application No.: 09/731,205

Art Unit: 2624
Examiner: Thierry L. Pham

Filed: 12-6-2000

Docket No.: A0508-US-NP
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For: AN INTELLIGENT SYSTEM NETWORK INTERFACE ARCHITECTURE FOR
DOCUMENT PROCESSING DEVICES

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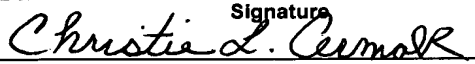

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PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE HONORABLE BOARD OF PATENT APPEALS AND
INTERFERENCES

In re the Application of Thieret et al.

Application No.: 09/731,205

Examiner: Thierry L. Pham

Filed: December 6, 2000

Docket No.: A0508-US-NP
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For: **AN INTELLIGENT SYSTEM
NETWORK INTERFACE ARCHITECTURE
FOR DOCUMENT PROCESSING DEVICES**

BRIEF ON APPEAL

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CLAIMS.....Appendix A

I. REAL PARTY IN INTEREST

The real party in interest for this appeal and the present application is Xerox Corporation (Stamford, Connecticut), by way of an Assignment recorded in the U.S. Patent and Trademark Office at Reel 011368, Frame 0163.

II. STATEMENT OF RELATED APPEALS AND INTERFERENCES

There are no prior or pending appeals, interferences or judicial proceedings, known to Appellant, Appellant's representative, or the Assignee, that may be related to, or which will directly affect or be directly affected by or have a bearing upon the Board's decision in the pending appeal.

III. STATUS OF CLAIMS

Claims 1-23 were finally rejected on July 13, 2005.

Claims 1-23 are on appeal.

A correct copy of claims appears in the Appendix attached hereto.

IV. STATUS OF AMENDMENTS

No Amendment After Final Rejection has been entered.

V. SUMMARY OF CLAIMED SUBJECT MATTER

Claim 1 is directed to a network document system including a document processing device (12, 14), a document processing device controller (16) and a network interface controller (20) for communicating job data and control data to and from a network (18). (FIG. 1) The interface controller (20) is disposed between the document processing device controller (20) and the network (18); and in parallel communication with the document processing device (12, 14) and document processing device controller (16), for segregating the job data and the control data. (Fig. 2). The segregated control data is directly communicated between the network interface controller (20) and the document processing device (12, 14). (Para. 25). The document processing device controller (16) is disposed between the network interface controller (20) and the document processing device (12, 14) for translating

the job data, which is communicated from the network interface controller to the document processing device (12, 14) independently from the control data, into data format executable by the document processing device (12, 14). (Para. 25).

Claim 7 is directed to a business to business communication system for controlling and monitoring a document processing device through network communications. A document processing device (12, 14) is responsive to remote communication signals and capable of issuing device operating status signals, the communication signals and status signals being received and sent, respectively, via a network system (18). (Para. 12). A network interface controller (20) is interposed between the document processing device (12, 14) and the network system (18) for distinguishing the remote communication signals as job data or control data. (Para. 25). A document processing device (12, 14), disposed intermediate the network interface controller (20) and the document processing device (12, 14) translates the job data, which is communicated from the network interface controller (20) to the document processing device controller (16) independently from the control data, into a data format executable by the document processing device (12, 14). (Para. 25). The control data is communicated to the document processing device (12, 14) directly straight from the network interface controller (20) and independently from the job data. (Para. 25).

Claim 19 is directed to a network document processing system, in which job data for processing a document is communicated from a job source to a printer (12, 14) via a network (18). (Abstract). A digital front end (DFE) (16) is disposed in communication with the printer (12, 14) for receiving and translating the job data into imaging signals recognizable by the printer (12, 14). (Para. 25). An intelligent interface network controller (iNIC) (20) is disposed intermediate the network (18) and the DFE (16), and in parallel communication with the printer (12, 14) and the DFE (16), for selectively communicating corresponding job data and control data independently from one another to or from the printer (12, 14) so that control data bypasses flow path communication through the DFE (16) during communications of the printer (12, 14) with the network (18). (Fig. 2, Para. 25, 27).

Claim 22 is directed to a method of operating a network-based assembly for document processing wherein the assembly includes an interface controller (20) connected between a document processing device (12, 14) and a network system (18), and a digital front end (DFE) (16) connected between the interface controller (20) and the document processing device (12, 14). (Fig. 2). The job data and control data are communicated to the assembly through the network system (18). (Abstract). The appropriate flow of the job data and the control data to the assembly is determined by the interface controller (20). (Fig. 2, Abstract). The control data is segregated from the job data at the interface controller (20). (Abstract). The control data is communicated directly to the document processing device (12, 14) and the job data at least to the DFE (16). (Para. 25). The job data at the DFE (16) is converted to document processing signals recognizable by the document processing device (12, 14). (Para. 25). The document processing signals are directed to the document processing device (12, 14). (Para. 25). The document processing signals are executed at the document processing device (12, 14). (Para. 25). The control data is communicated to and from the document processing device exclusive of a flow path through the DFE. (Para. 25, 27).

VI. GROUND OF REJECTION TO BE REVIEWED ON APPEAL

The following grounds of rejection are presented for review:

ISSUE 1. Whether **Claim 1 and dependent Claims 2-6** are properly rejected under 35 U.S.C. §103(a) as being obvious over Sorkin (U.S. Patent No. 5,898,823) in view of Irie (U.S. Patent No. 6,606,164).

ISSUE 2. Whether **Claim 7 and dependent Claims 8-18** are properly rejected under 35 U.S.C. §103(a) as being obvious over Sorkin (U.S. Patent No. 5,898,823) in view of Irie (U.S. Patent No. 6,606,164).

ISSUE 3. Whether **Claim 17** is properly rejected under 35 U.S.C. §103(a) as being obvious over Sorkin (U.S. Patent No. 5,898,823) in view of Irie (U.S. Patent No. 6,606,164).

ISSUE 4. Whether **Claim 18** is properly rejected under 35 U.S.C. §103(a) as being obvious over Sorkin (U.S. Patent No. 5,898,823) in view of Irie (U.S. Patent No. 6,606,164).

ISSUE 5. Whether **Claim 19 and dependent Claim 20** are properly rejected under 35 U.S.C. §103(a) as being obvious over Sorkin (U.S. Patent No. 5,898,823) in view of Irie (U.S. Patent No. 6,606,164).

ISSUE 6. Whether **Claim 22 and dependent Claim 23** are properly rejected under 35 U.S.C. §103(a) as being obvious over Sorkin (U.S. Patent No. 5,898,823) in view of Irie (U.S. Patent No. 6,606,164).

VII. ARGUMENT

Issue 1

Claims 1-6 are rejected under 35 U.S.C. §103(a) as being obvious over Sorkin in view of Irie.

The Examiner relies on Sorkin to teach a network document system which includes a document processing device, a document processing device controller and a network interface controller for communicating job data and control data to and from a network, wherein the interface controller is disposed between the document processing device controller and the network, and in parallel communication with the document processing device and document processing device controller, for segregating the job data and the control data. The segregated control data is directly communicated between the network interface controller and the document processing device. The document processing device controller is disposed between the network interface controller and the document processing device.

The Examiner relies on Irie to teach the document processing device controller for translating the job data, which is communicated from the network interface controller to the document processing device independently from the control data, into data format executable by the document processing device.

A. Claims 1-6 Are Not Obvious Over Sorkin in view of Irie

Claims 1-6 are not obvious over Sorkin in view of Irie because (1) the cited prior art does not teach or suggest all claim limitations; and (2) the cited prior art has not been shown to contain suggestion or motivation in the references themselves or in the knowledge generally available to one of ordinary skill in the art at the time the

invention was made, to modify the references or to combine the references teachings.

1. The Cited Prior Art does not Teach or Suggest all Limitations of Claim 1

a. The client computer of Sorkin is not in direct communication with the marking system

The Examiner relies on Sorkin to teach that the interface controller is in direct communication with the document processing device. Sorkin discloses that the communication path between the client computer and the printer is initially established via a spooler. The printer does not know the client's computer address. (Col. 5, lines 45-59). Only thereafter, the client computer can communicate with the printer. Therefore, because the client computer is not aware of the printer's address, the client computer is not in *direct* communication with the printer. At best, the client is in an *indirect* communication with the printer via a spooler/server.

b. The control data from the client computer is not communicated to the document processing device

The Examiner relies on Sorkin to teach that the control data is communicated between the network interface controller and the document processing device. After the client computer discovers the printer, Sorkin teaches a first communication path which runs from the client computer via the spooler to the printer and a second communication path which runs from the client computer to the printer. The purpose of the spooler is to temporarily store jobs and route them to the DFEs of different printers. The printer of Sorkin is depicted as a black box, the sub-units of the printer are not differentiated and not described. (Fig. 8). Furthermore, Sorkin teaches SNMP protocols. The SNMP protocols are supported by the DFE in typical printers and do not provide access to the marking device. Therefore, because Sorkin does not differentiate the elements of the marking system and teaches the SNMP protocols, Sorkin communicates with the DFE of the typical printer. Sorkin does not communicate with the document processing device.

c. The client computer of Sorkin is not in *parallel* communication with the document processing device and the document processing device controller ("DFE")

The Examiner relies on Sorkin to teach that the interface controller is in parallel communication with the document processing device and document processing device controller. As discussed above, Sorkin does not describe communicating to the document processing device. Sorkin communicates solely to the DFE. Therefore, both communication paths of Sorkin provide communications with the DFE.

- d. Print Server of Irie does not translate the job data into data format executable by the document processing device

The Examiner relies on Irie to teach the document processing device controller for translating the job data into data format executable by the document processing device. Irie discloses a print server 120 that controls the data interface between the upper level management system and lower level printing system when the upper level system does not have direct control of the lower level system. Irie does not teach that the print server translates the job data into data format executable by the document processing device, only that the print server "converts" the print data into a form of a print job. (Col. 8, lines 47-49). However, Irie teaches that the job data is translated into data format executable by the document processing device by a data analyzing/print data generating part 159. (Fig. 3, col. 7, lines 25-31). Therefore, the print server 120 does not translate the print data into data format executable by the document processing device.

- 2. No Motivation or Suggestion has been Shown to Modify or Combine Cited References

- a. No desirability has been shown to modify or combine server/spooler of Sorkin with print server of Irie

As discussed above, Sorkin discloses a printing architecture in which a computer establishes a communication path with a marking system through a server/spooler. (Fig. 8). Sorkin's goal is to discover the printer and communicate the non-print data to the printer by-passing the spooler. Irie discloses a printing architecture in which a print server controls the data interface between the upper

level management system and lower level printing system. The upper level management system communicates to the lower level printing system via a single path. (Fig. 3). There is no motivation or suggestion to those skilled in the art to combine teachings of Sorkin and Irie and modify or combine the spooler/server of Sorkin with the print server of Irie. It has not been shown why it would have been desirable for one skilled in the art to produce a printing architecture in which a computer can directly communicate in parallel with the document processing device and the DFE.

- b. No desirability has been shown to replace server/spooler of Sorkin with print server of Irie to translate the job data into data format executable by the document processing device

As discussed above, because Sorkin sends jobs from the spooler to the DFE, does not differentiate the elements of the marking system, does not discuss translation of the job data into data format executable by the document processing device and teaches SNMP protocols, Sorkin describes the typical printer configuration in which communications are provided with the DFE. There is no motivation or suggestion to those skilled in the art to combine teachings of Sorkin and Irie and modify or combine the spooler/server of Sorkin with the print server of Irie to translate the job data into data format executable by the document processing device as this operation is clearly performed by the DFE inherently present within the printer box of Sorkin. It has not been shown why it would have been desirable for one skilled in the art to produce a printing architecture in which two DFE devices are provided.

- c. Sorkin teaches away

As discussed above, Sorkin teaches the client computer that establishes a communication path to the printer that by-passes the spooler. The other party of such by-passed communication is the DFE. One, skilled in the art, would be looking to Sorkin to by-pass the spooler and establish a communication path from the client computer to the DFE.

d. Irie teaches away

Irie teaches the single communication path to the marking device 167 which lies through the DFE 159. (Fig. 3). No other communication path allows reaching the marking device 167 directly. One, skilled in the art, would not be looking to Irie to provide parallel communication paths to the DFE and document processing device.

e. The references were viewed with an impermissible hindsight

Examiner suggests modification of Sorkin by replacing the server/spooler with the print server of Irie to "obtain the invention as specified in claim 1". However, neither Sorkin nor Irie discloses or suggests providing parallel communication paths to the DFE and the document processing device. At best, the teachings suggest, when combined, to by-pass a spooler and to control the data interface between the upper level management system and lower level printing system. Applicants submit that the Examiner used an impermissible hindsight when suggesting a combination of Sorkin and Irie. Applicants were the first to think of communicating control data and print job data separately and in parallel to, correspondingly, the document processing device and the DFE, and treating the document processing device and the DFE as peer devices.

In conclusion, Applicants maintain that (1) the cited prior art does not teach or suggest all limitations of claim 1 and (2) no motivation or suggestion to combine the teachings has been presented, or, more importantly, exists in the references. The fact that some pieces of the totality of claim 1 exist separately in the references does not suggest the combination of the elements. Therefore, it is respectfully submitted that the rejection of claim 1 and dependent claims 2-6 is in error.

Issue 2

Claims 7 and 8-18 are rejected under 35 U.S.C. §103(a) as being obvious over Sorkin (U.S. Patent No. 5,898,823) in view of Irie (U.S. Patent No. 6,606,164).

The Examiner relies on Sorkin to teach a business to business communication system for controlling and monitoring a document processing device through network communications. A document processing device is responsive to

remote communication signals and capable of issuing device operating status signals, the communication signals and status signals being received and sent, respectively, via a network system. A network interface controller interposed between the document processing device and the network system for distinguishing the remote communication signals as job data or control data. A document processing device controller is disposed intermediate the network interface controller and the document processing device. The control data is communicated to the document processing device directly straight from the network interface controller and independently from the job data.

The Examiner relies on Irie to teach the document processing device controller for translating the job data, which is communicated from the network interface controller to the document processing device independently from the control data, into a data format executable by the document processing device.

B. Claims 7-18 Are Not Obvious Over Sorkin in view of Irie

Claims 7-18 are not obvious over Sorkin in view of Irie because (1) the cited prior art does not teach or suggest all claim limitations; and (2) the cited prior art was not shown to contain suggestion or motivation in the references themselves or in the knowledge generally available to one of ordinary skill in the art at the time the invention was made, to modify the references or to combine the references teachings.

1. The cited prior art does not teach or suggest all limitations of Claim 7

a. The control data is not communicated to the printer directly straight from the client computer

The Examiner relies on Sorkin to teach that the interface controller is in direct straight communication with the printer. Sorkin discloses that the communication path between the client computer and the printer is initially established via a spooler. The printer does not know the client's computer address. (Col. 5, lines 45-59). Only thereafter, the client computer can communicate with the printer. Therefore,

because the client computer is not aware of the printer's address, the client computer is in an *indirect* communication with the printer.

b. The client computer is not in communication with the document processing device

The Examiner relies on Sorkin to teach that the control data is communicated between the network interface controller and the document processing device. After the client computer discovers the printer and communication path between the client computer and printer is established, the client computer can communicate with the marking system which is depicted as a black box. (Fig. 8). Because Sorkin does not differentiate the elements of the printer, Sorkin communicates with the DFE as known in the art. In addition, Sorkin teaches SNMP protocols which are supported by the DFE in typical printers. The SNMP protocols do not provide access to the marking device. Therefore, Sorkin communicates with the DFE, which is located in the printer, by-passing the spooler, and not with the document processing device.

c. The client computer does not communicate the control data independently from the job data

The Examiner relies on Sorkin to teach that the control data is communicated independently from the job data by the network interface controller. Sorkin discloses that the communication path between the client computer and the printer is initially established via a spooler. The printer does not know the client's computer address. (Col. 5, lines 45-59). The client computer sends the job requests to the spooler. (Col. 4, line1). To establish the communication path with the printer, the client computer sends a non-print job to the spooler. (Fig. 3). Therefore, the client computer does not send the non-print data independently from the job data. Both non-print data and job data are sent to the spooler. Only thereafter, when the client computer discovers the printer, the non-print data can be separated from the job data and sent via an independent communication path from the client computer to the printer.

d. Print Server of Irie does not translate the job data into data format executable by the document processing device

The Examiner relies on Irie to teach the document processing device controller for translating the job data into data format executable by the document processing device. Irie discloses a print server 120 that controls the data interface between the upper level management system and lower level printing system when the upper level system does not have direct control of the lower level system. Irie does not disclose that the print server translates the job data into data format executable by the document processing device, only that the print server “converts” print data into a form of a print job. (Col. 8, lines 47-49). However, Irie teaches that the job data is translated into data format executable by the document processing device by a data analyzing/print data generating part 159. (Fig. 3, col. 7, lines 25-31). Therefore, the task of translating the print data into data format executable by the document processing device is not given to the print server 120.

2. No motivation or suggestion has been shown to modify or combine cited references

a. No desirability has been shown to modify or combine server/spooler of Sorkin with print server of Irie

As discussed above, Sorkin discloses a printing architecture in which a computer establishes a communication path with a marking system through a server/spooler. (Fig. 8). Sorkin's goal is to discover the printer and communicate the non-print data to the printer by-passing the spooler. Irie discloses a printing architecture in which a print server controls the data interface between the upper level management system and lower level printing system. The upper level management system communicates to the the lower level printing system via a single path. (Fig. 3). There is no motivation or suggestion to those skilled in the art to combine teachings of Sorkin and Irie and modify or combine the spooler/server of Sorkin with the print server of Irie. It has not been shown why it would have been desirable for one skilled in the art to produce a printing architecture in which a computer can directly communicate in parallel with the document processing device and the DFE.

b. No desirability has been shown to replace server/spooler of Sorkin with print server of Irie to translate the job data

into data format executable by the document processing device

As discussed above, because Sorkin sends the jobs from the spooler to the DFE, does not differentiate the elements of the marking system, does not discuss translation of the job data into data format executable by the document processing device and teaches SNMP protocols, Sorkin provides communications with the DFE. There is no motivation or suggestion to those skilled in the art to modify or combine the spooler/server of Sorkin with the print server of Irie to translate the job data into data format executable by the document processing device as this operation is clearly performed by the DFE inherently present within the printer box of Sorkin. It has not been shown why it would have been desirable for one skilled in the art to produce a printing architecture in which two DFE devices are provided.

c. Sorkin teaches away

As discussed above, Sorkin teaches the client computer that establishes a communication that by-passes the spooler. The recipient of such by-passed communication is the DFE. One, skilled in the art, would be looking to Sorkin to by-pass the spooler and establish a communication path between the client computer and the DFE.

d. Irie teaches away

As discussed above, Irie teaches the single communication path to the marking device 167 which lies through the DFE. (Fig. 3). No other communication path allows reaching the marking device 167 directly. One, skilled in the art, would not be looking to Irie to provide independent communication paths to the DFE and the document processing device.

e. The references were viewed with an impermissible hindsight

Examiner suggests modification of Sorkin by replacing the server/spooler with the print server of Irie to "obtain the invention as specified in claim 7". However, neither Sorkin nor Irie discloses or suggests providing separate independent communication paths to the DFE and document processing device. At best, the teachings suggest, when combined, to by-pass the spooler and to control the data interface between the upper level management system and lower level printing system. Applicants submit that the Examiner used an impermissible hindsight when suggesting a combination of Sorkin and Irie. Applicants were the first to think of communicating control data and print job data independently via separate parallel communication paths.

In conclusion, Applicants maintain that (1) the cited prior art does not teach or suggest all limitations of claim 7 and (2) no motivation or suggestion to combine the teachings has been presented, or, more importantly, exists in the references. Therefore, it is respectfully submitted that the rejection of claim 7 and dependent claims 8-18 is in error.

Issue 3

Claim 17 is rejected under 35 U.S.C. §103(a) as being obvious over Sorkin (U.S. Patent No. 5,898,823) in view of Irie (U.S. Patent No. 6,606,164).

The Examiner relies on Sorkin to teach the control data comprises object-oriented rendering data which distinguishes text, pictures and business graphics for enhancing document processing device operation.

C. Claim 17 is Not Obvious Over Sorkin in view of Irie

Claim 17 is not obvious over Sorkin in view of Irie because (1) the cited prior art does not teach or suggest all claim limitations; and (2) the cited prior art was not shown to contain suggestion or motivation in the references themselves or in the knowledge generally available to one of ordinary skill in the art at the time the invention was made, to modify the references or to combine the references teachings.

1. The cited prior art does not teach or suggest all limitations of Claim 17
 - a. The control data does not comprise object-oriented rendering data which distinguishes text, pictures and business graphics for enhancing document processing device operation

Sorkin describes that the client computer can communicate to the printer to determine the printer configuration or set up, or to monitor the printer. (Abstract). Sorkin does not describe that the client computer communicates to the printer the object rendering data which distinguishes text, pictures and business graphics to enhance the document processing device operation.

2. No motivation or suggestion has been shown to modify or combine cited references

No explanation has been included in the Office Action as to why it is desirable to combine the teachings of Sorkin and Irie.

In conclusion, Applicants maintain that (1) the cited prior art does not teach or suggest all limitations of claim 17 and (2) no motivation or suggestion to combine the teachings has been presented, or, more importantly, exists in the references. Therefore, it is respectfully submitted that the rejection of claim 17 is in error.

Issue 4

Claim 18 is rejected under 35 U.S.C. §103(a) as being obvious over Sorkin (U.S. Patent No. 5,898,823) in view of Irie (U.S. Patent No. 6,606,164).

The Examiner relies on Irie to teach that the object-oriented rendering data comprises page description language data about a document to be made at the document processing device.

- D. Claim 18 is Not Obvious Over Sorkin in view of Irie

Claim 18 is not obvious over Sorkin in view of Irie because (1) the cited prior art does not teach or suggest all claim limitations; and (2) the cited prior art was not shown to contain suggestion or motivation in the references themselves or in the knowledge generally available to one of ordinary skill in the art at the time the invention was made, to modify the references or to combine the references teachings.

1. The cited prior art does not teach or suggest all limitations of Claim 18
 - a. The control data does not comprise object-oriented rendering data which includes page description language data about a document to be made

As described above, Sorkin describes that the client computer can communicate to the printer to determine the printer configuration or set up, or to monitor the printer. (Abstract). Sorkin does not describe that the client computer communicates to the printer the page description language data about how the document to be made. Examiner asserts that print server 120 of Irie converts print data to PDL and performs color conversion, halftoning, etc. First, claim 18 does not set forth any type of conversion. Second, claims 7 and 18 set forth communication of the control data to the document processing device. The control data includes information how to print the document, e.g. what to do with the converted job data. Neither Sorkin, nor Irie describes the control data, communicated separately to the document processing device, which includes instructions on how to make the printed document from the converted job data.

2. No motivation or suggestion has been shown to modify or combine cited references

No explanation has been included in the Office Action as to why it is desirable to combine the teachings of Sorkin and Irie. Applicants submit that neither Sorkin, nor Irie, taken singularly or in combination, is concerned with communicating to the document processing device the instructions how to put the ink marks on print media.

In conclusion, Applicants maintain that (1) the cited prior art does not teach or suggest all limitations of claim 18 and (2) no motivation or suggestion to combine the

teachings has been presented, or, more importantly, exists in the references. Therefore, it is respectfully submitted that the rejection of claim 18 is in error.

Issue 5

Claims 19-20 are rejected under 35 U.S.C. §103(a) as being obvious over Sorkin (U.S. Patent No. 5,898,823) in view of Irie (U.S. Patent Application. No. 6,606,164).

The Examiner relies on Sorkin to teach a network document processing system, in which job data for processing a document is communicated from a job source to a printer via a network which includes a digital front end (DFE) disposed in communication with the printer for receiving the job data. An intelligent interface network controller (iNIC) disposed intermediate the network and the DFE, and in parallel communication with the printer and the DFE, for selectively communicating the job data and control data independently from one another to or from the printer, which control data bypasses flow path communication through the DFE during printer communication with the network.

The Examiner relies on Irie to teach a digital front end (DFE) for translating the job data into imaging signals recognizable by the printer.

E. Claims 19-20 Are Not Obvious Over Sorkin in View of Irie

Claims 19 and 20 are not obvious over Sorkin in view of Irie because (1) the cited prior art does not teach or suggest all claim limitations; and (2) the cited prior art was not shown to contain suggestion or motivation in the references themselves or in the knowledge generally available to one of ordinary skill in the art at the time the invention was made, to modify the references or to combine the references teachings.

1. The cited prior art does not teach or suggest all limitations of Claim 19
 - a. The client computer of Sorkin is not in communication with the printer and the DFE

The Examiner relies on Sorkin to teach that the interface controller is in communication with the printer and the DFE. Sorkin discloses that the communication path between the client computer and the printing system is initially established via a spooler. The printer does not know the client computer address. (Col. 5, lines 45-59). Only thereafter, the client computer can communicate with the printer. Therefore, because the client computer is not aware of the printer's address, the client computer is, at least initially, not in communication with the printer.

- b. The client computer of Sorkin is not in *parallel* communication with the printer and the DFE

The Examiner relies on Sorkin to teach that the interface controller is in parallel communication with the printer and the DFE. After the client computer discovers the printer and communication path between the client computer and printer is established, Sorkin teaches two communication paths. One goes from the client computer to the marking system via the spooler and other goes from the client computer to the marking system. Sorkin does not disclose that the client computer communicates via parallel communication paths to the printing engine and the DFE. Sorkin does not differentiate the elements of the marking system. The communication path from the computer is directed to the black box. (Fig. 8).

- c. The control data from the client computer is not communicated to the printer and does not by-pass the DFE

The Examiner relies on Sorkin to teach that the control data is communicated between the network interface controller and the printer. After the client computer discovers the printer and communication path between the client computer and printer is established, the client computer communicates with the marking system which is depicted as a black box. (Fig. 8). Because Sorkin does not differentiate the elements of the marking system, Sorkin communicates with the DFE as known in the art. In addition, Sorkin teaches SNMP protocols which are supported by the DFE in

printers. The SNMP protocols do not provide access to the marking device. Therefore, Sorkin communicates between the client computer and the DFE.

- d. Print Server of Irie does not translate the job data into imaging signals recognizable by the printer

The Examiner relies on Irie to teach the DFE for translating the job data into imaging signals recognizable by the printer. Irie discloses a print server 120 that controls the data interface between the upper level management system and lower level printing system when the upper level system does not have direct control of the lower level system. Irie does not disclose that the print server translates the job data into imaging signals recognizable by the printer, only that the print server “converts” the print data into a form of a print job. (Col. 8, lines 47-49). As known in the art, there are several different possible conversion of the print data, not necessarily into imaging signals recognizable by the printer. However, Irie describes a data analyzing/print data generating part 159 which translates the job data into imaging signals recognizable by the printer. (Fig. 3, col. 7, lines 25-31). Therefore, the task of translating the print data into imaging signals recognizable by the printer is not given to the print server 120.

- 2. No Motivation or Suggestion has been Shown to Modify or Combine Cited References

- a. No desirability has been shown to modify or combine server/spooler of Sorkin with print server of Irie

As discussed above, Sorkin discloses a printing architecture in which a computer establishes a communication path with a marking system through a server/spooler. (Fig. 8). Sorkin’s goal is to discover the printer and communicate the non-print data to the printer by-passing the spooler. Irie discloses a printing architecture in which a print server controls the data interface between the upper level management system and lower level printing system. The upper level management system communicates to the the lower level printing system via a single path. (Fig. 3). There is no motivation or suggestion to those skilled in the art to combine teachings of Sorkin and Irie and modify or combine the spooler/server of

Sorkin with the print server of Irie. It has not been shown why it would have been desirable for one skilled in the art to produce a printing architecture in which a computer can directly communicate in parallel with the document processing device and the DFE.

- b. No desirability has been shown to modify/combine server/spooler of Sorkin with print server of Irie to translate the job data into imaging signals recognizable by printer

Because Sorkin sends print jobs from the spooler to the DFE, does not differentiate the elements of the marking system, does not discuss translation of the job data into imaging signals recognizable by the printer and teaches SNMP protocols, Sorkin describes the typical printer configuration in which communications are provided with the DFE. There is no motivation or suggestion to those skilled in the art to modify or combine the spooler/server of Sorkin with the print server of Irie to translate the job data into imaging signals recognizable by the printer as this operation is clearly performed by the DFE inherently present within the printer box of Sorkin. It has not been shown why it would have been desirable for one skilled in the art to produce a printing architecture in which two DFE devices are provided.

- c. Sorkin teaches away

As discussed above, Sorkin teaches the client computer that establishes a communication with the printer that by-passes the spooler. The recipient of such by-passed communication is the DFE. One, skilled in the art, would be looking to Sorkin to by-pass the spooler and establish a communication path between the client computer and the DFE.

- d. Irie teaches away

As discussed above, Irie teaches the single communication path into the printing device 167 which lies through the DFE 159. (Fig. 3). No other communication path allows reaching the marking device 167 directly. One, skilled in the art, would not be looking to Irie to provide parallel communication paths to the DFE and document processing device.

- e. The references were viewed with an impermissible hindsight

Examiner suggests modification of Sorkin by replacing the server/spooler with the print server of Irie to "obtain the invention as specified in claim 19". However, neither Sorkin nor Irie discloses or suggests providing parallel communication paths to the DFE and the document processing device. At best, the teachings suggest, when combined, to by-pass the spooler and to control the data interface between the upper level management system and lower level printing system. Applicants submit that the Examiner used an impermissible hindsight when suggesting a combination of Sorkin and Irie. Applicants were the first to think of communicating control data and print job data separately and in parallel to, correspondingly, the document processing device and the DFE, and treating the document processing device and the DFE as peer devices.

In conclusion, Applicants maintain that (1) the cited prior art does not teach or suggest all limitations of claim 19 and (2) no motivation or suggestion to combine the teachings has been presented, or, more importantly, exists in the references. Therefore, it is respectfully submitted that the rejection of claim 19 and dependent claim 20 is in error.

Issue 6

Claims 22-23 are rejected under 35 U.S.C. §103(a) as being obvious over Sorkin (U.S. Patent No. 5,898,823) in view of Irie (U.S. Patent No. 6,606,164).

The Examiner relies on Sorkin to teach a method of operating a network-based assembly for document processing wherein the assembly includes an interface controller connected between a document processing device and a network system, and a digital front end (DFE) connected between the interface controller and the document processing device, the method comprising steps of: communicating job data and control data to the assembly through the network system; determining the appropriate flow of the job data and the control data to the assembly through the interface controller; segregating, at the interface controller, the control data from the job data; communicating the control data directly to the

document processing device and the job data at least to the DFE; directing the document processing signals to the document processing device; executing the document processing signals at the document processing device, whereby the control data is communicated to and from the document processing device exclusive of a flow path through the DFE.

The Examiner relies on Irie to teach converting the job data at the DFE to document processing signals recognizable by the document processing device.

F. Claims 22-23 Are Not Obvious Over Sorkin in View of Irie

Claims 22-23 are not obvious over Sorkin in view of Irie because (1) the cited prior art does not teach or suggest all claim limitations; and (2) the cited prior art was not shown to contain suggestion or motivation in the reference itself or in the knowledge generally available to one of ordinary skill in the art at the time the invention was made, to modify the reference.

1. The Cited Prior Art does not Teach or Suggest all Limitations of Claim 22

a. The control data is not communicated directly from the client to the document processing device

The Examiner relies on Sorkin to teach that the data is communicated directly from the interface controller to the document processing device. Sorkin discloses that the communication path between the client computer and printer is initially established via a spooler. The printer does not know the client's computer address. (Col. 5, lines 45-59). Only thereafter, the client computer can communicate with the printer. Therefore, because the client computer is not aware of the printer's address, the client computer is in an *indirect* communication with the printer, via a spooler/server.

b. The control data is not communicated to the document processing device

The Examiner relies on Sorkin to teach that the control data is communicated between the network interface controller and the document processing device. After the client computer discovers the printer and communication path between the client computer and printer is established, the client computer can communicate to the

marking system which is depicted as a black box. (Fig. 8). Because Sorkin does not differentiate or describe the elements of the marking system, Sorkin's computer communicates with the DFE as known in the art. Furthermore, Sorkin teaches SNMP protocols which are supported by the DFEs in typical printers. The SNMP protocols do not provide access to the marking device. Thus, because Sorkin does not differentiate or describe the elements of the marking system and teaches SNMP protocols, Sorkin communicates the control data to the DFE which is located in the printer/black box.

- c. The control data is not communicated to and from the printer exclusive of a flow path through the DFE

The Examiner relies on Sorkin to teach that the control data is communicated to and from the printer exclusive of a flow path through the DFE. As argued above, Sorkin directs the non print and print communication flow to the DFE. Therefore, Sorkin does not communicate exclusive of a flow the through the DFE.

- d. Print Server of Irie does not convert the job data into document processing signals recognizable by the document processing device

The Examiner relies on Irie to teach the document processing device controller for converting the job data into document processing signals recognizable by the document processing device. Irie discloses a print server 120 that controls the data interface between the upper level management system and lower level printing system when the upper level system does not have direct control of the lower level system. Irie does not teach that the print server converts the job data into document processing signals recognizable by the document processing device, only that the print server "converts" the print data into a form of a job. (Col. 8, lines 47-49). Those, skilled in the art of printing architectures, are familiar with several types of data conversion. One type is conversion of the job data into document processing signals recognizable by the document processing device. Furthermore, Irie teaches that the job data is converted into document processing signals recognizable by the document processing device by a data analyzing/print data generating part 159. (Fig.

3, col. 7, lines 25-31). Since (1) Irie does not describe that the print server converts the job data into document processing signals recognizable by the document processing device but (2) describes that such conversion is performed by a data analyzing/print data generating part 159, the task of converting the job data into document processing signals recognizable by the document processing device is not given to the print server 120.

2. No Motivation or Suggestion has been Shown to Modify or Combine Cited References

a. No desirability has been shown to modify or combine server/spooler of Sorkin with print server of Irie

As discussed above, Sorkin discloses a printing architecture in which a computer establishes a communication path with a marking system through a server/spooler. (Fig. 8). Sorkin's goal is to discover the printer and communicate the non-print data to the printer by-passing the spooler. Irie discloses a printing architecture in which a print server controls the data interface between the upper level management system and lower level printing system. The upper level management system communicates to the the lower level printing system via a single path. (Fig. 3). There is no motivation or suggestion to those skilled in the art to modify the spooler/server of Sorkin with the print server of Irie. It has not been shown why it would have been desirable for one skilled in the art to produce a printing architecture in which a computer can directly communicate via separate parallel paths with the document processing device and the DFE.

b. No desirability has been shown to replace server/spooler of Sorkin with print server of Irie to translate the job data into document processing signals recognizable by the document processing device

Because Sorkin sends print jobs from the spooler to the DFE, does not differentiate the elements of the marking system, does not discuss translation of the job data into document processing signals recognizable by the document processing device, and teaches SNMP protocols, Sorkin provides communications with the DFE. There is no motivation or suggestion to those skilled in the art to modify or

combine the spooler/server of Sorkin with the print server of Irie to translate the job data into document processing signals recognizable by the document processing device as this operation is clearly performed by the DFE inherently present within the printer box of Sorkin. It has not been shown why it would have been desirable for one skilled in the art to produce a printing architecture in which two DFE devices are provided.

c. Sorkin teaches away

As discussed above, Sorkin teaches the client computer that establishes a communication that is exclusive of a communication flow through the spooler. The recipient of such communication is the DFE. One, skilled in the art, would be looking to Sorkin to by-pass the spooler and establish a direct communication path with the DFE.

d. Irie teaches away

As discussed above, Irie teaches the single communication path into the printing device 167 which lies through the DFE 159. (Fig. 3). No other communication path allows reaching the marking device 167 directly. One, skilled in the art, would not be looking to Irie to provide two separate independent communication paths to the DFE and document processing device.

e. The references were viewed with an impermissible hindsight

Examiner suggests modification of Sorkin by replacing the server/spooler with the print server of Irie to "obtain the invention as specified in claim 22". However, neither Sorkin nor Irie discloses or suggests providing independent communication paths to the DFE and document processing device. At best, the teachings suggest, when combined, to by-pass the spooler and to control the data interface between the upper level management system and lower level printing system. Applicants submit that the Examiner used an impermissible hindsight when suggesting a combination of Sorkin and Irie. Applicants were the first to think of communicating

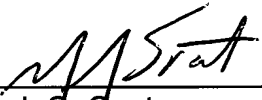
control data stream and print job data stream independently from one another to the DFE and the document processing device, respectively.

In conclusion, Applicants maintain that since (1) the cited prior art does not teach or suggest all limitations of claim 22, and (2) no motivation or suggestion has been shown to modify or combine the references, the rejection of claim 22 and dependent claim 23 is in error.

VIII. CONCLUSION

For all of the reasons discussed above, it is respectfully submitted that the rejections are in error and that Claims 1-23 are in condition for allowance. For all of the above reasons, Appellants respectfully request the Board of Appeals to reverse the rejections.

Respectfully submitted,



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CLAIMS APPENDIX

CLAIMS INVOLVED IN THE APPEAL:

1. A network document system including:
a document processing device,
a document processing device controller and
a network interface controller for communicating job data and control data to and from a network, wherein the interface controller is disposed, between the document processing device controller and the network, and in parallel communication with the document processing device and document processing device controller, for segregating the job data and the control data, and wherein the segregated control data is directly communicated between the network interface controller and the document processing device which document processing device controller is disposed between the network interface controller and the document processing device for translating the job data, which is communicated from the network interface controller to the document processing device independently from the control data, into data format executable by the document processing device.
2. The system as claimed in claim 1 wherein the control data includes any of: diagnostic data, operating software, remote operating instructions, performance reports, specification of system states and the associated actions, or requests for information from system elements.
3. The system as claimed in claim 2 wherein the performance reports comprise a number of documents generated by the document processing device, accounting information for assigning a billing responsibility for the documents generated, toner, ink, or paper consumption data, service history, device configuration, usage data, current status, machine identification or part or system failure data.
4. The system as claimed in claim 1 wherein the interface controller identifies object-oriented rendering data within the job data, and parallelly

communicates the object-oriented rendering data to the document processing device controller and the document processing device.

5. The system as claimed in claim 1 wherein the interface controller identifies object-oriented rendering data within the job data, and individually communicates the object-oriented rendering data to the document processing device controller and the document processing device.

6. The system as claimed in claim 1 wherein the interface controller comprises either a physical or logical entity in the system.

7. A business to business communication system for controlling and monitoring a document processing device through network communications, comprising:

- a document processing device responsive to remote communication signals and capable of issuing device operating status signals, the communication signals and status signals being received and sent, respectively, via a network system;

- a network interface controller interposed between the document processing device and the network system for distinguishing the remote communication signals as job data or control data; and

- a document processing device controller, disposed intermediate the network interface controller and the document processing device, for translating the job data, which is communicated from the network interface controller to the document processing device independently from the control data, into a data format executable by the document processing device;

- while the control data is communicated to the document processing device directly straight from the network interface controller and independently from the job data.

8. The system as defined in claim 7 wherein the control data includes the device operating status signals communicated as a regular operational report or in response to an inquiry received by the network interface controller from the network system.

9. The system as defined in claim 7 wherein the control data includes commands, flags or instructions for the device or interface controller to interpret or execute for determining under what conditions the system should return information to a remote entity.

10. The system as defined in claim 7 wherein the control data includes instructions, flags or commands telling the system what information is to be returned to a remote entity.

11. The system as defined in claim 7 wherein the control data includes instructions, flags or commands telling the system what types of local information processing should be performed on machine information before being returned to a remote entity.

12. The system as defined in claim 7 wherein the remote communication signals comprise a request and a response for control data from the document processing device and specification of document processing device conditions and associated actions.

13. The system as defined in claim 8 wherein the device operating status signals comprise billing information.

14. The system as defined in claim 8 wherein the device operating status signals comprise accounting information.

15. The system as defined in claim 8 wherein the device operating status signals comprise service information.

16. The system as defined in claim 7 wherein the control data comprises object-oriented rendering data.

17. The system as defined in claim 16 wherein the object-oriented rendering data distinguishes text, pictures and business graphics for enhancing document processing device operation.

18. The system as defined in claim 17 wherein the object-oriented rendering data comprises page description language data about a document to be made at the document processing device.

19. A network document processing system, in which job data for processing a document is communicated from a job source to a printer via a network, comprising:

a digital front end (DFE) disposed in communication with the printer for receiving and translating the job data into imaging signals recognizable by the printer; and,

an intelligent interface network controller (iNIC) disposed intermediate the network and the DFE, and in parallel communication with the printer and the DFE, for selectively communicating the job data and control data independently from one another to or from the printer, which control data bypasses flow path communication through the DFE during printer communication with the network.

20. The document processing system as claimed in claim 19 wherein the job data and the control data enable printer value-added services and management functions.

21. The document processing system as defined in claim 14 wherein the printer value-added services and management functions include at least one of: remote diagnostics, remote device management, image processing, process control, software update, consumable supplies status and ordering, and variable data job integrity.

22. A method of operating a network-based assembly for document processing wherein the assembly includes an interface controller connected between a document processing device and a network system, and a digital front

end (DFE) connected between the interface controller and the document processing device, the method comprising steps of:

- communicating job data and control data to the assembly through the network system;

- determining the appropriate flow of the job data and the control data to the assembly through the interface controller;

- segregating, at the interface controller, the control data from the job data;

- communicating the control data directly to the document processing device and the job data at least to the DFE;

- converting the job data at the DFE to document processing signals recognizable by the document processing device;

- directing the document processing signals to the document processing device; and,

- executing the document processing signals at the document processing device, whereby the control data is communicated to and from the document processing device exclusive of a flow path through the DFE.

23. The method as claimed in claim 22 wherein the executing comprises processing the document in a xerographic environment.